carry sounds for more than one virtual reel for reel games involving 4 or more virtual reels. Where dedicated reel speakers **149** are used, such dedicated reel speakers can be placed in locations that are relatively close to where their respective virtual reels are presented. For example, each of dedicated reel speakers **149***a*, **149***b*, **149***c* can be placed within the gaming machine cabinet or housing, beneath display **126** and spaced apart in close or rough correspondence with where their corresponding or respective virtual reels will appear on display **126**. Other locations for dedicated reel speakers may also be used, such as on the underside of a player input panel, and/or behind a belly glass or top glass. In addition, a plurality of separate audio channels may be used, such as one separate audio channel per dedicated reel speaker **149**. In this manner, sounds to the various dedicated reel speakers can be presented in stereo for added effect. In alternative embodiments, dedicated reel speakers are not used, and the various sound emulations disclosed herein can be presented at general speakers **132**.

[0066] One or both of reel spin timer **145** and reel sound generator **147** can be dedicated processors located separately from master gaming controller **140**, as shown in FIG. **5**, so as to alleviate some of the burdens that are typically placed on the master gaming controller of a wager-based gaming machine. Such a separate processor or processors could be, for example, the Pentium III processor chip made by Intel Corporation of Santa Clara, Calif., although other suitable processors can also be used. Alternatively, one or both of the reel spin timer and reel sound generator can be contained within or even be a part of the master gaming controller itself (not shown). Reel spin timer **145** may be in communication with master gaming controller **140**, one or more video controller(s) **144** and/or one or more display(s) **126**, while reel sound generator **147** can be in communication with master gaming controller **140**, one or more sound cards (not shown) and/or one or more dedicated reel speakers **149***a*, **149***b*, **149***c*. Reel sound generator **147** may also be in communication with sound card **143** and/or general speaker(s) **132**, particularly where dedicated reel speakers are not used.

[0067] One or more reel spin timer storage units or memory devices **146** can be associated with reel spin timer **145**, and such memory devices **146** can be dedicated to the reel spin timer or shared with other gaming machine components. Similarly, one or more reel sound generator storage units or memory devices **148** can be associated with reel sound generator **147**, and such memory devices **148** can be dedicated to the reel sound generator or shared with other gaming machine components. Such reel spin timer memory device(s) **146** and reel sound generator memory device(s) **148** could be separate specific memory chips and/or also an internal hard disk drive, such as, for example, a 40 gigabyte model 6K040L0 hard drive made by Maxtor Corporation of Milpitas, Calif., although other suitable memory components can also be used. In some embodiments, both reel spin timer memory device(s) and reel sound generator memory device(s) can be contained on the same set of memory chips and/or hard drive (not shown).

[0068] Reel spin timer memory device(s) **146** can be used to store various files and data with respect to different timings involved in the presentation of virtual reels, such as, for example, the length of reel spins and time intervals between the stopping of reels. Such files and/or data can contain formulae and/or table data for simulated reel spin and reel stop time intervals, as well as data from sampled timing patterns of actual mechanical reels. Reel sound generator memory device(s) **148** can be used to store various files and data with respect to the various simulated sounds involved in the presentation of virtual reels, such as, for example, the sounds of spinning physical reels, reel latches, stepper motors, solenoid actuations and other mechanical sounds that may be associated with the operation of physical reels. Such files and/or data can contain sound samplings or recordings from actual physical reels, as well as formulae and/or table data to readily facilitate randomized selections of such sound samplings for a more realistic audio emulation of physical reels.

[0069] In general, when physical mechanical reels are used for a reel based game, each reel spin tends to vary in its exact length of time due to a number of factors, which factors can include various imperfections in reel equipment, as well as the actual location on the reel of a selected reel stop, at least for electromechanical stepper reels. Furthermore, the length of the time delay from stopping one physical mechanical reel to another can also vary, again due to various imperfections in reel equipment and the reel locations of selected reel stops, among other factors. In many processor-based simulations of mechanical reels on video displays, however, the length of time to show a spinning reel and the time interval from one reel stopping to the next is often the same from one reel to another and from one game to the next.

[0070] Through the use of the various components described above with respect to processor-based gaming machine **100**, a more accurate emulation of physical reels can be had with respect to varying timings of reel starts, spins and stops. Reel spin timer **145** can be used to control or facilitate the control of the start, spin and stop times or durations for one or more virtual reels **191** presented on display **126** of gaming machine **100**. In some embodiments, reel spin timer **145** can facilitate the control of spin times for all virtual reels presented for a given reel game. Such timings and durations for reel starts, spins and stops can be selected randomly from a set of acceptable timings and durations for each category, and each such timing and/or time duration or interval can be selected separately for each separate virtual reel in a given reel game presentation. As noted above, reel start, spin duration and stop times can be sampled from actual physical reels, with the specific results being stored in a table or other data format for random selection by reel spin timer **145**.

[0071] In some embodiments, separate reel start, spin duration and/or stop times can be sampled and stored separately for each separate virtual reel. That is, the potential times that could selected for virtual reel **191***a* can come from a separate table or set of stored values than those for virtual reel **191***b*. Thus, various idiosyncrasies specific to a given physical reel can be somewhat preserved and transferred to a given virtual reel. In various embodiments, reel start, spin duration and/or stop times can vary from game to game. For example, stored reel times for virtual reels in a "Red White and Blue" reel type game can be completely different and stored in different files than those times for virtual reels in a "Double Diamond" reel type game.

[0072] As one non-limiting illustrative example, a first game might result in all reels starting at the same time, with virtual reel **191***a* spinning for 3.52 seconds, virtual reel **191***b* spinning for 4.07 seconds, and virtual reel **191***c* spinning for 4.49 seconds before each reel stops in succession. A second subsequent game on the same processor-based gaming machine with the same virtual reels might result in all reels similarly starting at the same time, with virtual reel **191***a*